

ated by it to fall afterwards upon a sheet of white Paper placed at some distance behind it, and there by that Refraction to paint the usual Colours of the Prism. And then causing the first Prism to be turned about its Axis as above, I observed that when those Rays which in this Prism had suffered the greatest Refraction and appeared of a blew and violet Colour began to be totally reflected, the blew and violet Light on the Paper which was most refracted in the second Prism received a sensible increase above that of the red and yellow, which was least refracted; and afterwards when the rest of the Light which was green, yellow and red began to be totally reflected in the first Prism, the light of those Colours on the Paper received as great an increase as the violet and blew had done before. Whence 'tis manifest, that the beam of Light reflected by the Base of the Prism, being augmented first by the more Refrangible Rays and afterwards by the less Refrangible ones, is compounded of Rays differently Refrangible. And that all such reflected Light is of the same Nature with the Sun's Light, before its Incidence on the Base of the Prism, no Man ever doubted: it being generally allowed, that Light by such Reflexions suffers no Alteration in its Modifications and Properties. I do not here take notice of any Refractions made in the Sides of the first Prism, because the Light enters it perpendicularly at the first Side, and goes out perpendicularly at the second Side, and therefore suffers none. So then, the Sun's incident Light being of the same temper and constitution with his emergent Light, and the last being compounded of Rays differently Refrangible, the first must be in like manner compounded.

Fig. 21. *Illustration.* In the 21th Figure, A B C is the first Prism, B C its Base, B and C its equal Angles at the Base, each of

of 45 degrees, A its Rectangular Vertex, F M a beam of the Sun's Light let into a dark Room through a hole F one third part of an Inch broad, M its Incidence on the Base of the Prism, M G a less refracted Ray, M H a more refracted Ray, M N the beam of Light reflected from the Base, V X Y the second Prism by which this beam in passing through it is refracted, N t the less refracted Light of this beam, and N p the more refracted part thereof. When the first Prism A B C is turned about its Axis according to the order of the Letters A B C, the Rays M H emerge more and more obliquely out of that Prism, and at length after their most oblique Emergence are reflected towards N, and going on to p do increase the number of the Rays N p. Afterwards by continuing the motion of the first Prism, the Rays M G are also reflected to N and increase the number of the Rays N t. And therefore the Light M N admits into its Composition, first the more Refrangible Rays, and then the less Refrangible Rays, and yet after this Composition is of the same Nature vvith the Sun's immediate Light F M, the Reflexion of the specular Base B C causing no Alteration therein.

*Exper. 10.* Two Prisms, which were alike in shape, I tied so together, that their Axes and opposite Sides being Parallel, they composed a Parallelopiped. And, the Sun shining into my dark Chamber through a little hole in the Window-shut, I placed that Parallelopiped in his beam at some distance from the hole, in such a posture that the Axes of the Prisms might be perpendicular to the incident Rays, and that those Rays being incident upon the first Side of one Prism, might go on through the two contiguous Sides of both Prisms, and emerge out of the last Side of the second Prism. This Side being Parallel to the first Side of the first Prism, caused the emerging Light to be Parallel to